

ABSTRACT

This disclosure teaches a method of filling deep vias or capping deep conducting paste filled vias in silicon or glass substrate using laser assisted chemical vapor deposition of metals. This method uses a continuous wave or pulsed laser to heat the via bottom and the growing metal fill selectively by selecting the laser wavelength such that silicon and/or glass do not absorb the energy of the laser in any appreciable manner to cause deposition in the field. Alternatively holographic mask or an array of micro lenses may be used to focus the laser beams to the vias to fill them with metal. The substrate is moved in a controlled manner in the z-direction away from the laser at about the rate of deposition thus causing the laser heating to be focused on the surface region of the growing metal fill.